

### REMARKS

Applicants have corrected minor deficiencies in claims 3 and 4, and added new claim 12. Support for the new claim can be found at page 16, lines 11-13 of the Specification. No new matter has been introduced by the above amendments.

Upon entry of the above-proposed amendments, claims 1-12 will be pending and under examination. Reconsideration of the application, as amended, is requested in view of the remarks below.

#### Rejection under 35 U.S.C. § 103(a)

The Examiner rejects claims 1-10 as being obvious over Sugimachi, U.S. Patent Application 2003/0198805 ("Sugimachi") in view of Kuwabara, U.S. Patent 6,775,059 ("Kuwabara") and Oya et al., U.S. Patent Application 2003/0186040 ("Oya"). See the Office Action, page 2, lines 4-7.

Independent claim 1 is discussed first. It covers a resin composition containing an acrylic resin and a dye. The acrylic resin is obtained by polymerizing at least a monomer of formula (1), i.e.,  $\text{CH}_2=\text{CR}-\text{COOX}$ , in which R denotes a hydrogen atom or a methyl group and X denotes a hydrocarbon group of 4-25 carbon atoms. The acrylic resin has an acid value in the range of 0 - 30 mg KOH/g. According to the specification (see page 30, lines 26-29), the acid value was calculated by the following equation:

$$\text{Acid value (mg KOH/g)} = [\text{Amount of carboxyl group containing unsaturated monomer charged (wt.\%)} \times 0.01 \times 56,100] \div [\text{Molecular weight of carboxyl group containing unsaturated monomer}].$$

Applicants now turn to the Examiner's arguments based on the three cited references. The Examiner points out that "Oya's acrylic adhesive is a copolymer of butyl acrylate and acrylic acid (Example 15 and paragraphs 0285 and 0286, Adhesive coating solution c). Oya also discloses a second acrylic adhesive containing monomers such as butyl acrylate, cyclohexyl methacrylate, ..." and contends that "it would have been obvious to a person of ordinary skill in the art at the time of this invention [was] made to utilize disclosure of Kuwabara and Oya in the invention of Sugimachi to use Oya's pressure sensitive adhesive ..." See the Office Action, page 3, lines 10-17. Applicants disagree.

As pointed out in Applicants' response filed on June 14, 2006, neither Sugimachi nor Kuwabara discloses or suggests a composition containing an acrylic resin prepared from a monomer of formula (1) recited in claim 1, in which X is a hydrocarbon group of 4-25 carbon atoms (see page 5, first paragraph), let alone an acrylic resin prepared from a monomer of formula (1) and having an acid value in the range of 0 - 30 mg KOH/g as required by claim 1.

Oya does not cure the deficiency in Sugimachi and Kuwabara. The Examiner correctly points out that Example 15 of Oya describes an acrylic adhesive resin prepared from butyl acrylate, a monomer of formula (1) recited in claim 1. However, as will be discussed immediately below, this acrylic resin has an acid value far greater than the upper limit of the acid value range recited in claim 1, i.e., 30 mgKOH/g.

The acrylic resin described in Example 15 of Oya is prepared from 47.0 wt% of butyl acrylate and 3.0 wt% of acrylic acid. Thus, the amount of acrylic acid in the acrylic resin is  $3.0 / (47.0 + 3.0) = 6.0$  wt%. According to the equation mentioned above, the acid value of this acrylic resin is  $(6.0 \times 0.01 \times 56,100) \div 72 = 46.7$  mg KOH/g,<sup>1</sup> far greater than the upper limit of the acid value range recited in claim 1, i.e., 30 mgKOH/g. Note that Oya also mentions another acrylic adhesive, which can also contain butyl acrylate as a monomer. See, e.g., paragraphs 0164-0168. However, it does not disclose or suggest that this acrylic adhesive has an acid value in the range of 0 - 30 mg KOH/g. In sum, Oya does not disclose or suggest an acrylic resin that is prepared from a monomer of formula (1) and has an acid value in the range of 0 - 30 mg KOH/g as required by claim 1. Thus, claim 1 is not obvious over Sugimachi in view of Kuwabara and Oya.

Even if a *prima facie* case of obviousness has been made (which Applicants do not concede), it can be successfully rebutted by an unexpected advantage of the acrylic resin recited in claim 1. In particular, as shown in Tables 3 and 4 of the Specification, each of the compositions prepared in Examples 1-14 contained an acrylic resin obtained from Synthesis Example 1-8 or 12-15, which was made from a monomer of formula (1) recited in claim 1 where X is a hydrocarbon group of 4-25 carbon atoms. These compositions all showed excellent heat resistance, humidity resistance, and stability at room temperature. See Tables 1, 2, 5, and 6, and

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<sup>1</sup> The molecular weight of acrylic acid is 72.

page 43, lines 2-12 of the Specification. By contrast, the composition prepared in Comparative Example 1 contained an acrylic resin obtained from Synthesis Example 9, which had an acid value of 32.6 mg KOH/g, outside the range 0 - 30 mg KOH/g recited in claim 1. See Tables 2 and 7. However, this composition showed inferior heat resistance, humidity resistance, and stability to the compositions prepared in Examples 1-14, which are covered by claim 1. See Table 8 and page 43, line 31 to page 44 line 3 of the Specification.

Given the above-mentioned unexpected advantage, claim 1 is clearly not obvious over Sugimachi in view of Kuwabara and Oya. Neither are claims 2-10, all of which depend from claim 1.

#### New Claim

Applicants submit that new claim 12 is also not obvious over Sugimachi in view of Kuwabara and Kume.

Claim 12 depends from claim 1. As discussed above, claim 1 is not rendered obvious by these three references. Neither is claim 12.

In addition, claim 12 is limited to an acrylic resin having a glass transition temperature (T<sub>g</sub>) in the range of -30 to 180°C. None of Sugimachi, Kuwabara, and Kume discloses or suggests the acrylic resin required by claim 12. Note that the acrylic resin obtained in Oya has a T<sub>g</sub> of -49°C, much lower than the lower limit of the T<sub>g</sub> range recited in claim 12. Thus, claim 12 is also not rendered obvious by these three references on this independent ground.

#### Allowable claim

The Examiner indicates that “[c]laim 11 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” See the Office Action, page 4, lines 1-3. As discussed above, claim 1 is not rendered obvious by these three references and is in condition for allowance. So is claim 11, which depends from claim 1.

The Examiner further states that he “interprets the fluorine atom containing unsaturated monomer [recited in claim 11] as a fluorine atom containing acrylate or a fluorine atom containing methacrylate (see page 9, lines 6-28 of [the] present disclosure).” See the Office Action, page 4, lines 8-11. To complete the record, Applicants would like to point out that the

term "fluorine atom-containing unsaturated monomer" recited in claim 11 is not intended to be limited to fluorine atom-containing acrylates or methacrylates. The passage cited by the Examiner clearly indicates that fluorine atom-containing acrylates and methacrylates are merely examples of fluorine atom-containing monomers. Indeed, the specification points out that fluorine atom-containing monomers include monomers other than fluorine atom-containing acrylates or methacrylates. See page 9, line 30 to page 10, line 6.

CONCLUSION


Applicants submit that the ground for rejection asserted by the Examiner has been overcome, and that claims 1-12, as pending, define subject matter that is nonobvious. On this basis, it is submitted that all claims are now in condition for allowance, an action of which is requested.

Please apply any charges to deposit account 06-1050, referencing Attorney's Docket No.: 08917-097001.

Respectfully submitted,

Date: \_\_\_\_\_

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